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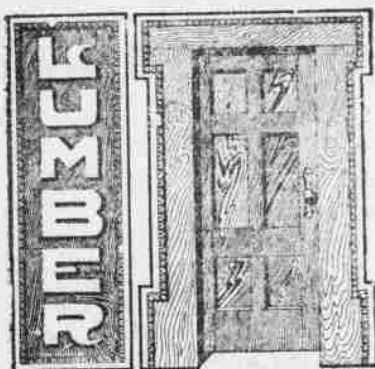
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Lumber because the wood is
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Every foot of it is thoroughly
seasoned, dried and shrunk, so
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by carpenters and builders, and
all sensible, wide-awake archi-
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Santa Fe

ANCIENT TURQUOISE WORKINGS

Brief Review of Turquoise In-
dustry in the South-
west.

(By Fayette A. Jones in Mining
World.)

To the archaeologist, to the geolo-
gist and to the mine operator, there is
nothing of more interest in our diver-
sified mineralogical resources, than
what is to be found in connection
with the turquoise mines of the south-
west.

Until about 30 years ago, most all
of the turquoise came from Persia,
near Nishapur, Khorassan, on the
southern slopes of Mount Ali-Mirsa,
northwest of Mader. Since that time
the American gem-stone has largely
supplanted the oriental product.

Turquoise has ever been an attrac-
tive stone of the precious variety and
has entered largely into the adorn-
ment of the person of both modern
and prehistoric times. The mineral
calleis spoken of by Pliny, is now
generally regarded as turquoise. The
Mohammedans used the polished gem-
stones for decorative and ornamental
effects in their great tabernacles of
worship; as likewise did the ancient
Peruvians and Mexicans in beautify-
ing their altars in the temples of the
sun. In all probability the throne of
gold in the gilded palace of Tezozom-
c was inlaid with turquoise from the
mines of New Mexico.

The mining of turquoise in the
southwest by the Pueblo Indians an-
ticipates the discovery of America by
several centuries. The profound
workings at Mount Chalchihuitl, south
of Santa Fe, had attained large pro-
portions, if not their full greatness,
before the advent of the Spaniard, Al-
var Nunez Cabeza de Vaca in his wan-
dering, A. D. 1534, with his three com-
panions, speaks of turquoise which
he saw at his farthest point north in
the Rio Grande valley, presumably
near the present site of Bernalillo;
this turquoise evidently came from
Mount Chalchihuitl workings about
30 miles distant. Chalchihuitl is the
Pueblo Indian name for turquoise.

By far the largest ancient turquoise
working is on the west side of Mount
Chalchihuitl, New Mexico. Owing to
the peculiar configuration of the
ground and extent of the working no
photo could be taken of this excava-
tion that would convey any adequate
knowledge of the magnitude of the
same. To appreciate it one must see
it with his own eyes. The working at
this point is, indeed, marvelous,
when we take into consideration
that this great excavation was chiefly
wrought, or perhaps wholly, accom-
plished by implements of the stone
age. Hundreds of stone implements
were found by the writer in the
dumps, associated with fragments of
the most ancient Pueblo pottery, fully

corroborate the antiquity of the tur-
quoise mining in the southwestern
part of the United States. At this
point it would be well to note that,
while tradition from the early Span-
ish records tend to convey the idea
that these mines were worked by the
Jesuit Fathers prior to the year 1680,
there has never been, to the writer's
knowledge, a single copper or iron
utensil or anything of distinctly Span-
ish origin that would tend to prove
any of this work was done under
Spanish rule. If otherwise true, then
implements, utensils and mining
methods employed by the Jesuits
were identically the same as those
of the Pueblo Indians. All of the stone
hammers and sledges found about
these ancient diggings were made
from hornblende-andesite, common to
the region, and especially adapted for
the purpose used, due to toughness
and freedom from fracture.

One stone sledge taken from these
old workings is said to have weighed
20 pounds, and had a portion of the
handle intact about the grove when
found; the desiccated condition of the
region preserved this relic of a van-
ished people.

The finding of a number of skele-
tons some 50 feet beneath the pre-
sent surface of this great pit indicate
that they lost their lives from a cav-
ing of the walls of the excavation.
History relates that the Pueblo up-
rising in the year of 1680 was due to
the wanton cruelties inflicted by the
Spaniards on the Indian miners. And
when the great cave-in occurred at
Mount Chalchihuitl, in 1680, killing
some 20 Indian slaves, a revolt against
the Spanish oppressors resulted in
them being driven from the country,
until about the close of the 17th cen-
tury. During this interval of non-oc-
cupation of the Spaniard the Indian
tribes obliterated many of the mines
formerly worked by the Jesuits; and
on the return of the Spaniards, more
than a century afterward, they were
given to distinctly understand that
they could not again engage in min-
ing, but should follow only the pur-
suits of agriculture and stock-raising.

While the ancient workings about
Chalchihuitl, in Santa Fe county, N.
M., are the largest of any in the
southwest, it is observed that no tur-
quoise deposits of any note have ever
been found in the west that did not
show the evidence of prehistoric min-
ing. Old pits and dumps in which
occur fragments of pottery, stone ham-
mers, etc., are found at the turquoise
deposits in the Burro mountains, at
Hachita, in the Jarilla mountains of
New Mexico; Mineral Park and Tur-
quoise mountain, Arizona; Saguache
county, Colorado; in Fresno county,
California; and in southern Nevada,
not far from Columbus. In most all
of the burial grounds and mounds of
the aborigines, found scattered over
the greater portion of the southwest,
turquoise beads and pendants are
found.

New Mexico turquoise takes high
rank and is a formidable rival of the
Persian stone; many gem experts
pronounce it even a more beautiful
stone than the oriental product.

Turquoise, mineralogically defined,
is a hydrous phosphate of aluminum,
colored with a complex copper com-
pound. The product is found in and
belongs wholly to the oxidized zone.
The best and purest specimens of
turquoise taken from the ground rarely
exceed a depth of 75 feet. Then, for
the origin of turquoise, we must
confine our research to the oxidized
zone and that, not far below the sur-
face. Here, the chemical action is
the greatest, and when the necessary
mineral constituents are present in
the enveloping rocks, the compound
mineral of turquoise is the result. So
there must be present in the rock-
matrix the elements of copper and
phosphorus, which together with the
more plentiful substances of silica,
lime and water, in order to form tur-
quoise.

It is observed wherever turquoise is
found that the enclosing rock-system
is much altered through kaoliniza-
tion of the feldspar, which furnishes
the aluminum hydrate. The matrix
rock is usually an altered granite
or trachyte, containing apatite, from
whence the phosphoric acid and
lime come. Perhaps, some of the
phosphorus may be derived from de-
caying organic matter at the surface
and sinks into the ground through the
agency of meteoric waters. It is fur-
ther observed that the turquoise is
usually found in and along defined
seamlets and checks in the matrix
rock; this would favor channels for
the descending waters to circulate,
which carry the essential constituents
necessary to form the turquoise.
Should the rock matrix contain too
high a percentage of copper and the
ground be not sufficiently leached of
its cupiferous compounds, a dark
greenish product is formed. It is
therefore essential that the elemental
substances entering into the forma-
tion of a perfect turquoise should ex-
ist in a definite proportion in the rock
matrix and the extremes of a maxi-
mum or a minimum of any one or
more elements be lacking. Every
chemist understands the effect that
an excess or deficiency that some re-
agent has in making an analysis;
doubtless, the same thing holds good
in the laboratory of nature.

A careful study of most of the mines
in the southwest, relative to the ori-
gin of turquoise, seems to leave ab-
solutely no doubt that, the beautiful
gem-stone is wholly a creation due to
complex chemical processes, chiefly
through the agency of meteoric waters
circulating through a matrix in the
oxidized zone, containing the ele-
ments essential to form the mineral
of turquoise.

The following analyses of turquoise
are given for comparison:

Cough Caution

Never positively never poison yourselves. If you
suffer from a cough, cold, croup, whooping
cough, etc., and use the irritant throat
cough tubes, don't blindly suppose it with a
sneezing poison. It's strange how some things
finally come about. For twenty years Dr. Shoop
has constantly warned people not to take cough
mixtures or prescriptions containing Opium,
Chloroform, or similar poisons. And now a little
late though—Congress says "Put it on the label."
If poisons are in your Cough Mixture, Good!
Very good! Hereafter for forty years more, and
others, should insist on having Dr. Shoop's
Cough Cure. No poison marks on Dr. Shoop's
label—and none in the medicine, else it must be
law to be the label. And if you only safe, but it
is said to be by those that know it best, a truly re-
markable cough remedy. Take no chances then,
particularly with your children. Insist on having
Dr. Shoop's Cough Cure. Compare carefully the
Dr. Shoop package with others and note the
difference. No poison marks there! You can
always be on the safe side by demanding

**Dr. Shoop's
Cough Cure**

STRIPLING BURROWS CO.

Chalchihuitl Stone, N. M.*

	Per cent
Aluminum and ferric oxides	29.53
Phosphoric pentoxide	31.96
Copper monoxide	6.30
Lime	.43
Silica	1.15
Water	19.80

Total 100.87
*Prof. Clarke, U. S. Geological Sur-
vey, Analyst.

**GREGORY PAGE SUED
FOR \$25,000 LIBEL**

McKinley County Republican Made
Co-Defendant—Interesting Fran-
chise War in Gallup.

Albuquerque, N. M., Dec. 29.—At-
orney T. N. Wilkerson yesterday
filed a suit for libel in behalf of May-
nard Gungel of this city and the own-
er of the electric light plant at Gallup,
against the McKinley County Republi-
can, a weekly newspaper published at
Gallup and against Gregory Page,
who the complaint alleges is the chief
owner of the newspaper and the in-
spiration of the article complained of.
The suit alleges that Gungel's char-
acter has been seriously damaged by
the publication of the article and asks
damages in the sum of \$25,000 and
costs.

The article complained of is an edi-
torial in the Gallup newspaper treat-
ing of the affairs of the light plant
there against which Page and his as-
sociates have been waging a vigorous
campaign for some time past. The
particular words on which the suit is
based, are as follows:

"With a mixed board of Republi-
cans and Independents favorable to
Gungel that scheming genius would
again have the laugh on the people of
Gallup. He could deliberately fling
the people for two years more." Mean-
ing, as the complaint sets forth, that
the plaintiff has been guilty of flinging
the people in the past.

The war between Gungel, the Gal-
lup Light Plant and the Republican,
Page and his associates dates from
the time when the Albuquerque man
became the owner of the light plant
there. Page formerly owned the
light plant which has been the sub-
ject of a continuous string of litigation
for several years past. The light
plant has a franchise for lighting the
town of Gallup and the present cam-
paign is intended to forfeit that fran-
chise and make a contract with one
of the power plants at a near by coal
mine to light the town. It is alleged
by enemies of the plant that the
plant is out of date and that the ser-
vice given is not up to contract. The
war has gotten well into politics in
the western town and it is charged,
has resolved itself into a war be-
tween the Page faction and the so-
called Independents, who charge Page
with being the boss of the town. The
articles directed against Mr. Gungel
are a direct result of this war. Mr.
Gungel who has made his home in Al-
buquerque for some years past has re-
cently become vice-president and
manager of the Federal bank in Los
Angeles where he expects to make his
home in the future.

**COMMISSIONERS REFUSE
SALOON LICENSE.**

P. Badaracco of Old Albuquerque
Made the Request but Petitions
Were Presented Against It.

Albuquerque, N. M., Dec. 29.—The
county commissioners at a meeting
held yesterday in the court house,
audited and ordered paid the bills
against the county for the last quarter
of 1909, leaving the county with a
clean slate on current accounts for
the new year. All bills were paid
dollar for dollar.

A petition for a saloon license, sub-
mitted by P. Badaracco was before
the commission. The petitioner asked
a license to conduct a saloon in Old
Albuquerque, precinct 13. There were
also before the board petitions pro-
testing against the granting of the li-
cense. The board declined to issue it.

A petition from property owners in
precinct No. 1, San Jose, for the open-
ing of a road from the Phelan place
to the Rio Grande was laid over until
the first regular meeting in January.

The board will meet again the first
Monday in January. The only other
action of importance yesterday was
the approval of the \$50,000 bond of
the Missouri Valley Bridge Company,
which is now beginning construction
of the new bridges across the Rio
Grande.

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feet above sea level, sunshine every day, but
little rain or snow during session.

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and modern in all respects.

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A. Flynn

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Superintendent.

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Cliff Dwellings, twenty-five miles west
of Taos, and fifty miles north of Santa
Fe, and about twelve miles from Bar-
anco Station, on the Denver and Rio
Grande Railroad, from which point a
daily line of stage runs to the springs.
The temperature of these waters is
from 90 to 122 degrees. The gases are
carbonic. Altitude 6,000 feet. Climate
very dry and delightful the entire
year round. There is now a commodi-
ous hotel for the convenience of in-
valids and tourists. People suffering
from consumption, cancer, and other
contagious diseases, are not accepted.
These waters contain 1,626.24 grains
of alkaline salts to the gallon, being address:

ANTONIO JOSEPH, Proprietor.

Ojo Caliente, Taos County, N. M.

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